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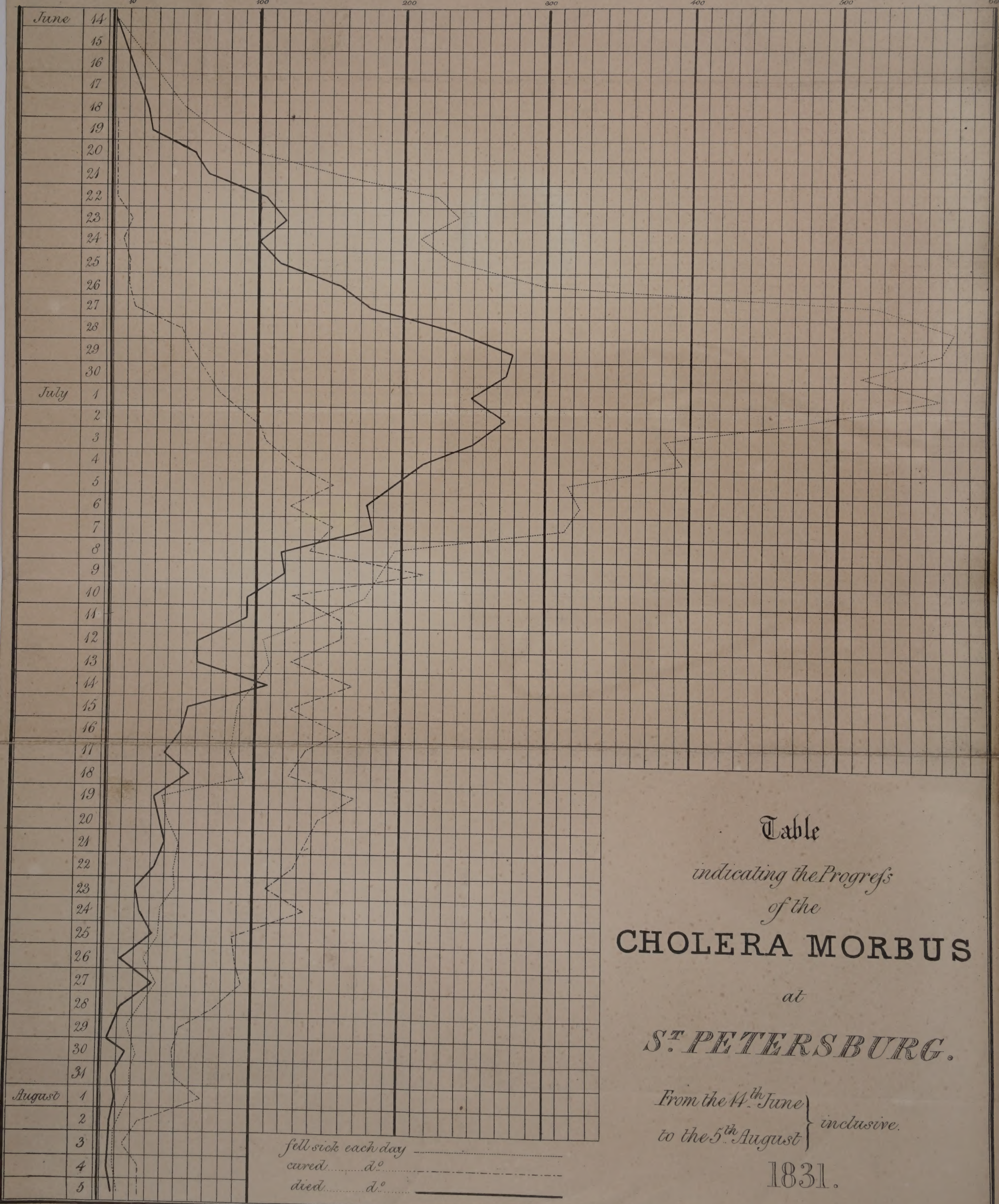

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Table

indicating the Progress of the

CHOLERA MORBUS

at

St. PETERSBURG.

From the 14th June to the 5th August } *inclusive.*

1831.

C. Hullmandel's Lithography

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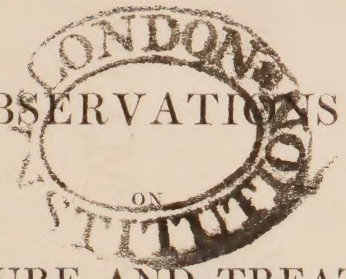

OBSERVATIONS

ON

THE NATURE AND TREATMENT

OF

THE CHOLERA MORBUS,

NOW PREVAILING EPIDEMICALLY IN

ST. PETERSBURG.

BY

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"Si quid novisti rectius istis,
"Candidus imperti; si non, his utere mecum."
HOR. EPIST. 6.

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PREFACE.

I was appointed in conjunction with several of my colleagues to superintend a large though not very populous district during the prevalence of the late epidemic in St. Petersburg.

I had also to perform duty in rotation at one of the largest temporary hospitals, established during the first ten days after the appearance of the disease, and was subsequently removed to a less considerable establishment in my more immediate neighbourhood.

Towards the decline of the epidemic, when the duties were much less severe or had almost ceased, I received a circular from the inspector of the district, Dr. Markus, who requested me to communicate my observations upon the following subjects.

1st. " Relatively to the invasion, mode of propagation and progress of the disease in my district, specifying particularly the number of cases and deaths, as well as the state, condition, and mode of life of the persons attacked.

2dly. " Relatively to the pre-disposing and occasional causes of the disease.

3dly. " Relatively to its character and symptoms both at its commencement and during its course and decline.

4thly. " Relatively to the contagiousness or non-contagiousness of Cholera, founding my opinion upon positive facts; and more particularly as regarding the attendants of the sick, whether they were attacked with the disease during their attendance.

5thly. " Relatively to the treatment and to the means I found most efficacious during the different periods of the epidemic."

In conformity with this request I drew up the substance of the following statement, transcribing from my journal such observations as I had made for my own instruction, without any idea of being called upon to produce them.

In fulfilling this task, I was induced to

enter more at large into the subject, and as I imagine that the observations of an individual, or rather a comparison between the observations of different individuals during the late malady, cannot be wholly without interest, I have been induced to send the following to England for publication.

Much apology is due for the imperfect state in which these remarks are presented to the public, but I do not offer them as an essay or a treatise, but merely as the results of the experience of an individual.

I wish to invite the attention of the profession to the true nature and seat of the disease, in order that we may arrive at some more rational method of treatment.

I am convinced that this can only be discovered by the joint efforts of the dissector and the chemist, and it will only be by their repeated application to the scalpel and the alembic, that they can hope for success.

With respect to the question of contagion, I require more facts before I can positively make up my mind to say, whether under any circumstances Cholera can be considered contagious.

As regards the present epidemic, such as I have lately witnessed it, I am bound to say that I have no rational grounds for believing it to be so.

This question, however, demands great and impartial consideration, and is in abler hands than mine.

I have dwelt at some length upon the treatment, because I think it is the duty of every medical man to acquaint the public as early as possible with any plan that has appeared to him successful, in however small a degree.

If any thing I have suggested may enable the profession to come nearer to the point of unravelling the intricacies of a disease which threatens to make as much havoc in the west as it has done in the east, my object will be fully answered, and I shall be enabled and gratified to say "Nec ego frustra."

St. Petersburg,
September, 1831.

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INVASION AND PROGRESS.

The progress of the Cholera Morbus through different parts of the Russian Empire is already known: and although its march has not been so satisfactorily accounted for, as could be desired, in order to illustrate the real nature of the disease and its mode of propagation; yet sufficient evidence has been collected, that it has appeared epidemically in most of the great towns in Russia, where, after having raged for a short period violently, it has almost entirely disappeared, or dwindling down to a few isolated cases, has been unnoticed or forgotten, until, consistently with the character of all Epidemics, it has again returned, and though with less violence, has maintained the same character as upon its first appearance.

This has been particularly observed in many parts of the interior, where it first appeared about twelve months ago, and having made great ravages for a short period, left the inhabitants in comparative security, till its re-appearance after some months of absence again plunged them into uncertainty as to the future prevalence of this new and terrific malady.

The identity of this disease with the Indian Cholera, had been fully ascertained before it made its appearance in St. Petersburg. This was decided by the faculty of Moscow—a decision confirmed by the testimony of physicians, who had witnessed it in the East Indies.

Among the most striking features in the propagation of this disorder, is what may be styled its eccentric motion;—and, true to its Eastern character, it presented this feature here, not only in its passage through the country, but even in its dissemination over the different parts of a town which it invaded.

In its progress from Tiflis to Moscow, it was observed to move in a zig-zag direction, rather than in a regular line of march. It would pass by a town which lay immediately in its path, to appear in another, which it must have reached by a very circuitous route.

When it invaded a town, it followed the same

law; touching at a point to fly off at a tangent, and appear at a widely separated part from that where it first commenced, leaving the intermediate spaces uncontaminated.

Such was observed to be its character when it reached St. Petersburg, where it was first announced officially on the 14th of June, as having appeared in the suburbs.

A few days sufficed for its dissemination over the capital; and this so widely and so generally, as in most cases to preclude all idea of mere connexion with infected persons being the sole cause of its propagation.

I was myself called to see a case upon the third day of its appearance. The patient resided upon the English Quay, a distance of at least three English miles from the place where it first appeared. She was an old woman of sixty-seven years, who scarcely ever left her room; she attributed her attack to indigestion, and died in less than twenty-four hours with all the symptoms of inveterate Cholera.

In this respect, therefore, it agrees fully with the description given of it by those physicians who have been conversant with it in India.

"The disease," says Dr. Kennedy, "would sometimes take a complete circle round a vil-

lage, and leaving it untouched pass on, as if it were about wholly to depart from the district. Then after a lapse of weeks, or even months, it would suddenly return, and scarcely reappearing in the parts which had already undergone its ravages, would nearly depopulate the spot that had so lately congratulated itself upon its escape."

This whole passage is applicable to St. Petersburg at the present moment; for though last autumn we were surrounded on all sides by the Cholera, still we escaped during the winter and succeeding spring. Seven months had elapsed since its appearance in places not far distant from the capital, and we began to think that the Imperial City would escape its ravages.

"There is a striking resemblance," observes Dr. Kennedy, "between the propagation of the Plague, as described by Procopius, and that of Cholera.

"It always spread from the sea coast to the inland country; the places which had escaped the fury of its first passage, were alone exposed to the contagion the second year."

People resumed their usual avocations and their ordinary diet; they began to regret the

privations they had voluntarily undergone in abstaining from various articles of food which they considered dangerous.

The profusion of fruit which pours into Petersburg from all the southern provinces, but particularly the grapes and water-melons from Astracan, had the preceding season been allowed to rot in the hampers in which they were imported.

The supposed preservative means were now generally laid aside, and the houses were no longer redolent with the fumes of chlore, tar, and juniper, which poisoned the antechambers.

The Family Receipt Book was no longer conned over by day and meditated upon by night, and Buchan and Thomas had already been replaced by Fairy Tales and Travels in the East.

The medicine chests and prescriptions of each confidential physician were altogether discarded; castor oil and opium fell again to a moderate price; and, indeed, the confidence in the faculty was much shaken, when it was ascertained that the means employed by the common people were equally successful with those adopted by the profession itself.

Some few, however, continued to use the same precautions as heretofore, and even took medicine by anticipation. Some even fell victims to such an absurdity. In the midst, however, of this almost general oblivion of the past, the Hydra-headed monster was upon his route; for the evil day had only been postponed.

The Journals announced publicly the invasion of the Malady; but the panic was by no means so great as upon the news of its having reached Moscow the preceding autumn; for the minds of the people had already been accustomed to the name of Cholera, and it had lost half its terrors.

The friends to the doctrine of contagion saw immediately the full proofs of their belief realized, because they found the disease imported by a bargeman, in an infected barge, and from an infected station. Nothing could be more evident, nothing more conclusive.

Those of a contrary opinion disputed the point, and with some degree of plausibility. If the disease had been so imported, why did not the man fall ill before his arrival at St. Petersburg?

How was it that none of his companions, exposed to the same causes, should have been attacked also?

When, upon inquiry, it was found that within the space of three days the disease broke out in a dozen parts of the town widely separated from each other, the supporters of contagion awaited further evidence, and the anticontagionists increased with the increase of the disease.

Towards the latter end of the preceding autumn, the government, aided by voluntary contributions from the nobility and merchants, had established additional hospitals in various parts of the town. No pains nor expense had been spared to render them fit for the reception of the sick, and they were not merely provided with necessaries, but every luxury was supplied which ingenuity could invent.

The zeal of many of the nobility to contribute, not only by pecuniary donations, but by the example of their presence, to encourage and provide for the sufferers, was without bounds.

I am personally acquainted with a nobleman, who, upon hearing of the Cholera having reached Petersburg, left his country seat at a long distance from the capital, hurried up to town, and was to be found from morning till night acting

the good Samaritan, with as pure and disinterested intentions as his prototype of old.

It is true he was a non-contagionist, and feared not infection, and this confidence adds much weight to the advantages of the doctrine, inasmuch as it stimulates the opulent to exert themselves upon such occasions with proper philanthropic feelings.

It could only have arisen from the fear of contagion, so much insisted upon by some few medical men, that many deserted their posts in the hour of danger, fled from the city in the day of her trouble, and shut their doors to all who had communication with her.

It is not intended to attach blame to any individual, or to assert that the greater part were not influenced by motives equally laudable; but fear is a great barrier to charitable exertions, and though to be lamented, is seldom to be overcome.

Such as fully believed in the doctrine of contagion could not reconcile it to their consciences to expose their families to its influence, and as such persons are known to be more susceptible of morbid impressions, so they would have been unjustifiable in exposing themselves; but we merely wish to insinuate that fatalism

may be turned to good account, and that scepticism and unbelief are of use in *worldly* affairs.

Upon the appearance of the Cholera in Moscow, the emperor himself hurried off to that capital, and contributed much by his presence to calm the public mind. His presence here was not less valuable upon this occasion, as from misunderstanding on the one hand, and evil disposition on the other, every thing contributed to excite popular commotion; but as soon as his majesty was apprised of the proceedings, he hastened to town from his country residence, and his presence not only quelled all temporary commotions, but disorder entirely ceased, and was not again renewed.

The people, not aware of its nature and little versed in its history, began to be sceptical concerning this singular disease.

The suddenness of its attack, and more particularly, its rapid termination, with the strange appearances caused by its ravages on the human frame, created suspicions of an unpleasant nature.

The disease was attributed by the people to poison, and nothing apparently could be more authentic than the reports that were spread of miscreants taken in the act of putting poisonous

drugs into the food and drink of the common people.

How far these opinions were founded in truth it is foreign to my object to investigate, except inasmuch as considerable influence was produced on the public mind by this unfortunate belief; an influence which soon proved an insurmountable obstacle to affording assistance to many who were attacked.

As for myself, I met with no direct proof of poison having been administered.

Such popular commotions are by no means uncommon in the history of epidemics; nor is the suspicion entertained of poisoning so much to be wondered at, when in England, and in an enlightened class of society, a man was publicly tried for having poisoned his wife, and was only acquitted upon the evidence of four physicians, who testified that she died of the Cholera Morbus.*

Whenever strict quarantines are *attempted*, for they will never be strictly observed, as we see by the daily accounts we have of the progress of the disease, there will be temporary discontent; for as the working of a machine can never be perfect, unless all the parts move in harmony

* Kennedy's Notes on Cholera.

with each other, so in these cases, the best intentions will be frustrated by the subordinate agents being unfit for the service for which they were selected; thus becoming not merely impediments to the working of the whole, but giving it altogether a different and opposite direction.

For the sake of convenience the town was divided into different sections, and to each was appointed a medical inspector and a proportionate number of assistants; and upon an average, every physician had from forty-five to fifty houses to attend in case of need, and moreover to perform the duty of a hospital during a stated number of hours every day.

Such were the orders delivered, and such the arrangements made, even previous to the invasion of the malady.

SYMPTOMS OF CHOLERA.

The variety of shapes under which this disease presents itself is so great, that it is impossible to specify all the symptoms which characterise its attacks.

Sydenham, in speaking of the Cholera Morbus in 1669, observes, "Malum ipsum facile cognoscitur," but he is evidently speaking of a totally different disease; and in spite of the opinions of some writers, who assert the Indian Cholera to be an aggravated form of the European malady, it is evident that the present epidemic differs *toto cælo* from that described by the old Nosologists, if, perhaps, we except Sauvages, who speaks of a Cholera Indica.

Dr. Keir, of Moscow, has lately proposed the following definition, which, with the exception of one clause ("aliquando contagiosus"), appears to be perfect.

"Morbus aliquando contagiosus, plerumque virium vitalium subita maximaque prostratio,

oppressa debilisque Cordis Arteriarumque actio. Recessus sanguinis a superficie ad interiora, diarrhæâ vomituque serosis raro bilis coloratis et fibrarum Musculorum spasmis; animi facultates parum turbatæ."

Now on comparing this with the description given by our great nosologist, Dr. Cullen, it is evident that the diseases are totally different; when the principal symptom which characterises the Cholera he treats of, is an inordinate secretion of bile. " Humoris biliosi vomitus, ejusdem simul dejectio frequens."

The symptoms of the present epidemic coincide so exactly with those so fully described in the Bombay Report of the Indian Cholera, that I transcribe them *verbatim*.

" The attack was generally ushered in by a sense of weakness, trembling, giddiness, nausea, violent retching, vomiting and purging of a watery, starchy, whey coloured or greenish fluid.

" These symptoms were accompanied or quickly followed by severe cramps, generally beginning in the fingers and toes, and thence extending to the wrists and forearms, calves of the legs, thighs, abdomen, and lower part of the thorax. These were soon succeeded by pain,

constriction and oppression of stomach and pericardium, great sense of internal heat, inordinate thirst and incessant calls for cold water, which was no sooner swallowed than rejected, together with a great quantity of phlegm, or a whitish fluid, like seethings of oatmeal.

"The action of the heart and arteries now nearly ceased, the pulse either became altogether imperceptible at the wrists and temples, or so weak as to give to the fingers only an indistinct feeling of fluttering.

"The respiration was laborious and hurried, sometimes with long and frequently broken inspirations. The skin grew cold, clammy, covered with large drops of sweat, dark, and disagreeable to the feel, and discoloured of a bluish, purple, or livid hue.

"There was great and sudden prostration of strength—anguish, and agitation. The countenance became collapsed; the eyes suffused, fixed, and glossy; or heavy and dull, sunk in their sockets, and surrounded by dark circles; the cheeks and lips livid and bloodless, and the whole surface of the body nearly devoid of feeling."

To this description must be added as a pathognomonic symptom, the coldness of the tongue,

which was universal in the stage of collapse. The change and loss of voice was also very remarkable from the commencement of the attack. It was a peculiar sound, difficult to describe. The patient felt as if he could not speak, and yet there was little sense of constriction or spasm about the glottis.

The temperature, taken in the stage of collapse, when the skin was corrugated, and had that deadly feel so peculiar to this stage, was twenty-four and a half Reaumur taken under the tongue, and only twenty-three in the hand.

The patient was a young woman in the prime of life, and had been ill only twelve hours.

The suspension of the urinary secretion was very general, if the disease was prolonged beyond the first stage.

Such are the symptoms of this formidable malady in its aggavated form, and with such for our guide, it would seem hardly possible to mistake it. Few cases, however, presented all the symptoms enumerated in this extract, or exhibited such well defined marks. In many its approach was insidious, assuming no one feature by which Cholera could be recognised,

and in the first days of the epidemic, the modes of attack were as various as the persons attacked.—See Case 6.

Some were suddenly seized whilst walking in the streets, and seemed as if struck by lightning, of which I myself witnessed a case. Others, gradually, with what they supposed to be a slight bowel complaint, which they consequently neglected, till awakened to the real nature of the case by their extremities becoming cold.

It is impossible to detail, in fact, all the anomalies which presented themselves; but as there were some striking differences in the present epidemic, both from that described by the medical men who had witnessed the Cholera in India, and even in the disease which prevailed at Moscow, so I shall slightly sketch these, speaking only of what I myself witnessed, and of that class of symptoms which I found most prevalent.

A collection of the experience of several medical men would be a useful document, inasmuch as it would elucidate one of the most marked characters of the disease: viz., its eccentricity; for the accounts I have collected

from my colleagues differ much from my own observations, and it is probable no two reports would be alike.

The affection of the head was almost universal, but it was of different kinds.

Sometimes the patient complained of a sudden lancinating pain, which was of momentary duration; at other times the feeling that is produced by fainting, dizziness before the eyes, dimness of vision, muscæ volitantes, preceded the attack.

The following Case illustrates a peculiar feeling in the head immediately preceding an attack of Cholera. The person was seized in my presence, whilst giving directions regarding the arrangements of a large hospital, over which he presided. He was sixty years of age, and apparently in perfect health; whilst in the midst of conversation he suddenly put his hand to his head, and complained of a sharp pain passing through the temples, which lasted but for a few seconds; he ascribed it immediately to having taken a pinch of snuff from a neighbour's box, which being stronger than that which he habitually took, it had got into his head. The sensation passed off, and he resumed his conversation. This took place at

nine o'clock, p. m., at eleven he was seized with other symptoms of Cholera, and died of the disease after five days' illness.

Though I have almost universally found an attack of Cholera preceded by something bordering upon vertigo, yet in one rapidly fatal case, no such feeling was present till it was produced by the weakness caused by the evacuations. Case, No. 1.

Noise and singing in the ears have never, as far as my recollection serves me, been absent in any case of real Cholera that I have attended. It even causes deafness in many, and this is generally the symptom upon which the lower class lay the greatess stress.

Nausea and vomiting varied much in the present epidemic, and more particularly at its commencement, when they were seldom found in the distressing degree mentioned in the extract. As it advanced, they became more frequent, but many patients lay for hours together without rejecting any thing from the stomach, and several of these cases terminated fatally. In all instances the desire to drink was great, and the thirst insatiable; and this symptom remained as long as the more characteristic marks of Cholera were present. Cold liquids

were preferred to warm, but in whatever state they were taken they were seldom rejected.

Where vomiting did occur, it was very similar to what is seen in sea sickness: the patients lay quietly in a horizontal posture, without much nausea or desire to vomit; but when they raised their heads, they commenced vomiting immediately, and with that kind of straining which we witness in sea sickness.

The matter rejected differed according to the contents of the stomach at the time it was thrown up; but where it was not coloured by food or medicines, was generally of a greenish cast. In some it had the appearance of coffee grounds; and in others a quantity of pure bile was vomited. The more empty the stomach, the greater was the distress produced by the effects, but the patients always spoke of relief occasioned by free and copious vomiting; upon the whole however nausea and vomiting were not the most distressing symptoms, and in this respect the disease differed from its Indian parent, for in the latter the vomiting is described as incessant, the patient not being able to retain the least thing upon the stomach, not even a grain of opium; and the fatality of the disease was

attributed to the circumstance of medicines not being able to produce their effects on account of their speedy rejection from the stomach.

The pain in the abdomen varied in different subjects: in some it was very acute, increased by pressure, or even by the touch, resembling peritonitis; in others, a burning and twisting pain about the navel accompanied by a sense of spasm; in many instances very little acute pain was complained of. In some a rumbling noise, such as is produced by flatulency, was observed. Again occasionally in others, a heavy dull pain, expressed by a low and peculiar groan; but in very few instances could I realize the following description.

"The pain in the epigastrium and in the bowels was excruciating, the colicky pains were dreadful; it seemed as if the intestines were torn in pieces; the intervals of pain were very short; the pains commenced with the first effort to vomit, and did not cease till the disease terminated either by death, or sudden removal of all the symptoms."

Neither in private practice, nor in the hospitals which I attended, did I witness any such sufferings as are here described; and in proof of this, I may mention a circumstance which

occurred during my attendance at the Sakoloff hospital.

A negro was brought in under suspicious circumstances; he believed himself in the agonies of death from being poisoned. He screamed most violently, begging for a priest to confess him.

It happened that at this moment a physician well conversant with the disease was ascending the stairs with me. "Ay, that 's the true Cholera cry," he exclaimed. I replied, this is the first patient we have had, who has expressed his sufferings in this manner; we are accustomed generally to a low, moaning voice.

Spasmodic affections of the abdominal muscles, and contractions of the recti abdominis, were witnessed in a child of four years' old, who died of the disease.

The veins of the lower extremities were often drawn into knots, and the toes bent as in common cramps; and though necessarily painful, were by no means so agonizing as described by many writers.

A pricking sensation about the instep, or a feeling similar to the commencement of the gout, was not uncommon; but this was little heeded till other symptoms succeeded.

Some complained of great pain in the region of the kidnies, and of other nephritic symptoms.

Slight spasms in the chest have often preceded an attack. These were of momentary duration and resembled a sharp instrument passing through the lungs, stopping the breath and causing great anxiety; such as is frequently witnessed in a more advanced stage, where the symptoms are those of real asphyxia, occasioned by stagnation of the blood in the heart and large vessels.

In this stage the intercostals were thrown into painful spasmodic action from the double duty imposed upon them. Spasms in the fore arms were not very frequent.

A tremulous motion of one or two fingers, or of the fleshy part between the thumb and forefinger, and twitching of the zygomatic muscles of the face were also found to give warnings of an attack.

To these may be added a feeling which patients could never express—a restlessness, bodily and mental—a nervous excitement which must be felt to be understood, and which affected many who had, and many who had not the disease in question.

It is impossible to measure the effects of fear

upon the human mind, or to calculate the action of the latter, under uneasy impressions, upon the body itself.

It is not possible to say whether this was the real and only cause, but certain it is that during the larger portion of time during which the Cholera prevailed, there was a general indisposition, a certain *malaise*, which affected almost every individual.

People complained of uneasy sensations in the bowels, a certain feeling which was new to them, a sense of dragging down, and a loss of tone in the whole system.

This affection, whatever it might have been, was not under the control of medicine; it subsided with the decline of the disease; hence I attribute it to nervous affection, and the effects of fear.

OF THE PREDISPOSING AND EXCITING CAUSES.

Of all causes which predisposed to this disease moral affections were found the most frequent; and their baneful effects were not merely confined to rendering their victims more susceptible of the malady, but they produced a decisively fatal influence upon the constitution itself.

That many died of fright was a phrase re-echoed by every medical man in the City, and fear may consequently be considered as the chief predisposing cause.

I did not find that a previous weak state of health, (except in the old,) nor even the habitual derangements of the primæ viæ predisposed to this affection, unless these were caused by previous intemperance, and the abuse of wines and spirituous liquors. The effects of previous intemperance upon the system seemed to predispose it more than any other cause to the disease.

The state of the weather was nearly the same during the first four or five weeks of the epidemic. The winds prevailed from the east, and

the thermometer averaged about fifteen and a half degrees off Reaumur in the shade. The nights were warm without much dew. A sudden change in the weather, which occurred towards the decline of the malady, when a cold wind accompanied by rain prevailed for several days, did not in the least influence it.

It had been observed at Moscow and Riga, that any great fêtes where the lower orders were assembled, and where intoxication was a common consequence, were always followed by a marked increase in the ensuing day's list of invalids; but notwithstanding two such fêtes were held here, accompanied by their usual result—inebriation, yet no augmentation in the number of the sick followed; because they took place at a time when the malady was on the decline, a circumstance highly characteristic of its epidemic nature, which, when upon the decrease, was not to be renewed by any communication between individuals.

Imprudence and excesses of the table, the use of undressed vegetables and unripe fruits, cold liquids taken into the stomach when the surface is preternaturally warm, are all so many exciting causes. In short all those causes which are said to produce the common Cholera under

ordinary circumstances seem to have the same effect in the present epidemic ; but with respect to these particular inquiries should be made, as both the causes and effects are often very much exaggerated.

The use of quass has been much condemned, particularly if taken when the body is warm ; but as it is the common beverage of the people, who continued to drink it in as large quantities as ever during the whole of the time, so, many cases that were attributed to it must be placed to other accounts, seeing what numbers indulged in it with impunity.

If the disease be specific, and *sui generis,* it is evident that imprudence in diet cannot of itself produce it ; but as it may predispose to it, so it comes under that class of exciting causes.

It was observed of this malady, as Sydenham observed of the plague, that there was during its prevalence what he styled a Constitutio Epidemica ; or that all kinds, or the greater part at least, of the reigning distempers were converted into this prevailing epidemic.

In this sense, therefore, an imprudence in diet capable of producing under common circumstances an ordinary bowel affection, would

in the present case generate a Cholera Morbus, inasmuch as it did by this derangement become a predisposing cause. Much obscurity must always exist about predisposing causes, for they are conjectural and not tangible, and where we seem to see them they are frequently found not to exist.

If irregularities in diet can generate the Cholera, then the disease can only be considered as an aggravated form of the malady already known in Europe. This has been asserted by men of eminence, who consider Celsus to have been perfectly conversant with it; but the difference between the symptoms and course of the present epidemic and that of which Celsus treats, is such as to preclude their identification.

Though it is evident that intemperance was one of the chief predisposing causes, yet it was equally evident, that free and generous living were among the best preservatives against the Cholera. Among our countrymen of all classes, and we reckon more than two thousand in Petersburg, only thirteen died. Several of these were old and infirm; and this must in a great measure be attributed to the difference in their modes of living.

That it was rather ascribable to this than to any other cause, seems also probable from the following circumstances, which are much to the purpose.

In a sugar manufactory, where all the workmen had an increased allowance of food of a wholesome kind, no individual was attacked. In another large establishment where the workmen were composed of slaves and freemen, the greatest mortality prevailed among the former, whilst the latter almost all escaped.

Even in private families the same was observed to take place; and it may thus be stated as a positive fact, and one well entitled to legislative attention, that pure air and good substantial living will be found among the best preservatives against the Cholera. The Russian labourer lives at all times upon hard fare; even his best food is much less nutritious than that of our peasant; he seldom eats meat, even when he has the means of procuring it.

Black sour rye bread with salt sprinkled upon it, and occasionally a bit of salt herring or an onion, constitute his principal food.

The long fasts also enjoined by his church, and the quantity of oil and dried mushrooms which he consumes during these periods, toge-

ther with the baneful use of ardent spirit, which creates a kind of fictitious strength, all tend to undermine what little stamina nature may have originally given him; he is seldom a long liver, and soon falls a victim to any serious disease, even in his prime. To determine the proximate cause of a disease should be the first object of our inquiries, because it involves all the rational parts of practice.

Much has been written upon this subject with regard to the Cholera Morbus, and many a *ratio symptomatum* has been advanced; but, as hitherto, none of them have been founded on indubitable evidence (nor had they been so, could this evidence have been sufficient to have accounted for all the phenomena); these theories have lived their day, to be replaced by others not less improbable, and not more satisfactory than themselves.

It is much to be lamented, that from uncontrollable circumstances a minute investigation of the effects produced by Cholera upon the body has not been generally attempted by dissection, during the prevalence of the epidemic in Petersburg. As all reasoning upon matters of fact is founded on the relation of

cause and effect, so it is most desirable to study well the effects of diseases upon the different organs, as from such knowledge alone can we be able to judge of their causes.

Minute and repeated dissections of the patients who have died should never be omitted where there is a possibility of performing them.

Among the various theories which have been formed of this disease,

Some have ascribed it to concussion of the brain.

Some to asphyxia.

Some say the seat is in the solar plexus.

Some consider it a species of tetanus.

Some, and with much more probability, have defined it a catarrh of the intestinal canal.

It would much exceed the limits of this paper to discuss the different theories here advanced.

It may be allowed me to ask the following questions:—

What analogy exists between the effects produced by Cholera and those by mineral poisons upon the system?

Is the bile really changed in this disease?

What are the changes it undergoes?

Does the blood undergo any other change than that produced by the separation of its aqueous parts?

Is this process chemical, mechanical, or vital?

What is the state of the other secretions examined chemically?

Is that peculiar smell of the perspiration to be attributed to a mixture of urine secreted vicariously from the surface of the body?

Is the Cholera a new disease?

Is not the primary cause a spasmodic action upon the capillaries, causing sudden revulsion to the internal surfaces?

Is not this proved by the sudden abstraction of blood from the whole surface by the diminution of animal heat, by the corrugated appearance of the skin from the emptiness of its capillaries, and by the copious secretions of the internal mucous membranes, which, when allowed to continue too long, deprive the blood of its former fluidity, and prevent the heart from propelling it in this inspissated state through the smaller vessels?

Is this not countenanced by the use of opium, which overcomes the spasms, and, conjoined with external heat and frictions, restores the

balance between the external and internal mucous membranes?

Are not these opinions strengthened by the greater probability of curing the disease at its commencement, before the spasm has too long existed, and the blood been deprived of its serum?

IS THE CHOLERA CONTAGIOUS?

With regard to this important question, my experience has hitherto been too limited for me to offer any decided opinion upon the subject.

It requires a mass of evidence, and a patient investigation of many circumstances, which, though at first sight plausible frequently prove deceptive, to make up one's mind positively on this question.

As far as my practice is concerned, both in the quarter allotted me, and also in private houses in different parts of the town, I have no proof whatever that the disease is contagious.

The first patient I saw was upon the third day of the epidemic, and upon strict inquiry I could not trace the least connexion between the patient, or those who were about her person,

with that part of the town where it first appeared, a distance of several versts.

As regards the attendants of the sick, in no one instance have I found them affected by the disease, though in many cases they paid the most assiduous attention, watched day and night by the beds of the affected, and administered to all their wants.

I knew four sisters watch anxiously over a fifth severely attacked with Cholera, and yet receive no injury from their care.

In one case I attended a carpenter in a large room where there were at least thirty other men, who all slept on the floor among the shavings; and though it was a severe and fatal case, no other instance occurred among his companions.

In private practice among those in easy circumstances, I have known the wife attend the husband, the husband the wife, parents their children, children their parents; and in fatal cases, where from long attendance and anxiety of mind we might conceive the influence of predisposition to operate, in no instance have I found the disease communicated to the attendants.

As for many reports which have been cir-

culated, and which *primâ facie* seem to militate against the statement, I have endeavoured to pay the most impartial attention to them; but I have never found upon thorough investigation that their correctness could be relied upon, and in many instances I have ascertained them to be designedly false; so that as far as proof can be drawn from my own limited experience, I have none to offer in favour of Contagion.

The present disease has borne throughout the character of an Epidemic, and when the reports advanced in proof of its contagion have been minutely examined, they have been generally found incorrect; whereas it is clear and open to every inquirer, that the Cholera did not occur in many places which had the greatest intercourse with Petersburg at the height of the malady, and that it broke out in many others which have been subjected to the strictest quarantines.

The difference however between contagion and infection requires to be more fully explained, if they are not synonymous terms.

If a disease can be proved to be infectious, it may by the same reason be proved contagious, because the question will then resolve itself into predisposition or peculiar susceptibility.

A person who in one condition or state of body is capable of receiving the disease by what is termed infection, or as it were a concentration of the miasma such as occurs in the wards of a hospital, will in another state contract the disease from a much minuter quantity, or such as may be communicated by the touch; for we have no measure of the quantity of deleterious matter with which an atmosphere may be impregnated; we can judge only by the effects, that some morbific matter is present, though we are not able to detect it by the nicest analysis.

Idiosyncrasies teach us, that some substances are cognizable to some persons and not to be recognized by others at the same moment, when both are placed in the same circumstances.

The scent of a flower will produce a morbid effect upon the olfactory nerves of one person, whilst another will hardly discover any smell in it.

There is a disorder to which some people are subject in the hay-making season; it is attributed to the pollen of flowers, which, dispersed through the air and penetrating the nares, irritates the mucous membrane to such a degree as

to cause constant sneezing and even inflammation. It is called the hay asthma.

This illustrates the meaning of peculiar susceptibility and predisposition, for very few people are subject to this affection, though hundreds are exposed to it at the same time.

Those who are so affected must be said to have a peculiar irritability of the mucous membrane of the nose; but this is not reducible to ocular demonstration, and we can only judge of the cause from the effects.

The same arguments may be applied to contagion, and the same susceptibility of impression may reduce to a relative what was supposed to be an absolute fact.

The question regarding predisposition consequently can never be fairly solved till we are able to decide *à priori* and from the appearance of an individual, whether he is susceptible of receiving morbid impressions from being placed in circumstances capable of producing them. In marching a regiment over the Pontine Marshes we cannot decide *à priori* how many soldiers shall fall down ill of Malaria.

The same doubts may exist regarding Cholera as have long existed with regard to puerperal fever; and it would be well to inquire if under

peculiar circumstances, a disease reputed to be not contagious may not be converted into a contagious one.

The arguments which have hitherto been adduced on both sides may be compared to the two knight-errants, who, after having fought some time about the metal of which the shield was made, gave up the contest when they had examined both its sides.

OF THE DIAGNOSIS AND PROGNOSIS.

It would be hazardous to say that a common bowel complaint, or a fit of the colick, is an attack of Cholera; and yet many such a commencement has proved to be so in the end.

It is utterly impossible to determine the nature of the complaint till the symptoms are at their height; but when once the Cholera physiognomy is present, a child would be able to recognize it.

We are often placed in perplexing situations in this respect; we are exposed to the censure of the fastidious, if we pronounce a case to be Cholera, which, terminating favourably in a

short time, convinces them to the contrary. We are doubly blamed if we treat that lightly which afterwards proves to be Cholera.

Yet to say that all the successful cases have not, and that all the fatal ones have been Cholera, is to rob the profession of what little merit it may have.

If it is dangerous, therefore, to form hasty opinions, it is equally so to be over cautious from a regard to our medical reputation.

In our investigation, therefore, we must take into consideration the age and habits of the patient, and weigh well the symptoms, taking due care that he be not induced by fear of the disease to lay too much stress upon trifles; and our questions should be particularly guarded.

In paying particular attention to the symptoms, we must not alarm the patient by laying stress upon any of them; for of all things to be dreaded, fear is the most so in this complaint.

When we have well considered the case and made up our minds, we must reply to the questions of our patient by evasive answers, or even by positive denials when the disease is actually present; for we may truly say with Pope, in such circumstances, that

"Blunt truths more harm than little falsehoods do."

These observations apply to doubtful cases also, the diagnosis soon becoming evident when the disease really exists.

As to distinguishing at the onset what species of Cholera we have to deal with, that will be almost impossible in many cases; nor will it be of practical utility. If there be one symptom more characteristic than another of the Indian Cholera, it is the watery nature of the stools.

Sydenham's description of the Epidemic Cholera of 1669 is not less terrific than that quoted from the Madras Report.

The prognosis varies much in this disease, as it is often difficult to determine what may be the consequences of the attack hereafter.

In slight cases, and in previously healthy subjects, where the symptoms yield to the first remedies, it will always be favourable.

In severer cases, if the pulse and animal heat are renewed after having been suspended, and keep up to any thing approaching a natural standard; if the pains do not suddenly subside, but assume more of a colicky character; if the fæces become more formed, the clammy perspirations cease, and urine be again secreted in small quantities; if the countenance return to its human appearance, and the voice to its

original tone; all these may be considered as favourable prognostics.

A sudden cessation of all pain after severe suffering from cramps in the bowels, or a continued increase of spasms, becoming more and more insupportable; the rejection of every thing taken into the stomach; a complete loss of pulse and animal heat, which are not to be reproduced by frictions or any of the means usually employed; difficulty of respiration; a sense of suffocation; the peculiar countenance, moral depression, and no symptoms of reaction, are all unfavourable prognostics.

As regards the Prognosis, however, it would require a separate Treatise for its explanation, for it differs in every individual case, and nothing but experience in the disease can explain it.

OF THE MEDICAL TREATMENT OF CHOLERA.

The treatment of diseases is divided into two kinds, the rational and the empirical. The former is founded upon certain principles, and the means are adapted to certain indications.

Thus we know that certain drugs will at all times, *cæteris paribus*, produce certain effects upon the system.

The action of the heart and arteries is reduced by the influence of digitalis.

Precisely the contrary effect will ensue from the employment of ammonia.

The nerves are paralyzed by the action of lead, internally and externally employed.

They are strongly excited, on the contrary, by the action of nux vomica; hence we say that digitalis and lead are sedatives, and ammonia and nux vomica stimulants, because such effects are excited by the employment of these drugs upon the system in a state of health.

The empirical practice, on the other hand, is determined merely by use, and acts according to no physiological laws with which we are acquainted: thus bark and arsenic, two very different substances, cure a fit of the ague, but we know not what action they exert upon the system to produce this effect. Such medicines so applied are called specifics.

In our choice of treatments we prefer the rational method, because we see, or seem to see more clearly a path which must always be more or less obscure; but this method is founded upon the relation of cause and effect.

Thus cold suddenly applied will cause an inflammation of the mucous membrane of the nose and fauces, and this is called catarrh. To remedy this we make use of such means as will counteract the effects of a known cause upon a known part of the animal economy—viz., the mucous membranes.

The cause and effects, at least in their due relations, are not known as regards Cholera, hence the method of cure has not been rational.

As no one medicine, nor any class of medicines, have yet been found that will in the greater number of cases cure the disease; so the practice can neither be called rational nor empi-

rical, if we employ the word empirical according to the signification given it by the older writers, who implied by empirical practice such as had been sanctioned by use and experiment.

If we may be allowed to give a name to the practice generally adopted in Cholera, we shall call it Symptomatical.

It is evident that of all the different methods this must be the most unsatisfactory, because being founded neither on theory nor on experience it must vary with every different case that presents itself; as each constitution being different, the effects of disease upon it will be different also. That such is the case in the present epidemic every physician who sees the disease will be ready to acknowledge, whilst he regrets the melancholy truth of the statement; and he will be obliged to confess that after having tried the different specifics proposed, and after having been foiled in attempting to discover a rational method, he has in most cases been reduced to the third plan, or that of treating symptoms as they presented themselves.

If these premises are granted and the statement allowed to be correct, the conclusion will

naturally follow, that as such practice is unsatisfactory, it has been also unsuccessful; for upon comparing the results of each medical man's practice during the whole of the present epidemic, it will be found upon an average that he lost one half upon the whole number of his patients; that during the first days of its invasion he lost eight-tenths of those who were really attacked with Cholera, whereas during the decline of the disease he saved the same proportion; and that taking the whole number of cases which presented themselves during two months that we were afflicted with this pestilence, more than half resisted all the effects of medicine, and perished either of the disease or its immediate consequences.

How does this accord then with the accounts we daily see in print, and which have all the testimony that their authors can require respecting their veracity?

Before we solve this problem it may be allowed perhaps to digress a little, and inquire if this seeming contradiction be new in the history of medicine, and if it be confined entirely to the disease in question.

Some analogy has been mentioned between puerperal fever and Cholera as regards the

question of infection; the same will hold good with respect to the anomalies in its treatment.

We subjoin the following extracts from Dr. Gooch's last work upon this disease.

"Puerperal fever was prevalent in Derbyshire and the adjacent counties between 1765 and 1775, and was described by Dr. Butter of Derby.

"His opinion was that bleeding ought never to be used in this disease unless when complicated with inflammation, and even in these cases bleedings of three ounces were sufficient; that the best remedy was ten grains of rhubarb and ten grains of cordial confection every day till the stools became natural, and that this mode of treatment *never failed*.

"In 1787, about ten years after Dr. Butter wrote, a puerperal fever was prevalent and fatal in London, and was described by the late Dr. John Clarke, . . . Of the patients attacked with this disease, more than *two thirds* died; bleeding was injurious; emetics were hurtful; bark and cordials, though indicated by debility, were inefficacious.

"Dr. William Hunter, and Richter, the professor of medicine and surgery in Gottingen, were two of the most useful minds that ever appeared in our profession. If any men could, such men

might be trusted for giving accurate reports of a disease. Yet compare the accounts which these distinguished men have left of their experience in puerperal fever.

"Dr. William Hunter used to say in his lectures—'Of those attacked by this disease, treat them in what manner you will, at least three out of four will die. We tried various methods, (bleeding, refrigerants, stimulants, mithridate,) but every thing failed.'

"Richter, speaking of the child-bed fever, says, 'I have often seen the child-bed fever, and always treated it successfully. I have also seen cases, both near and at a distance, in which the fever was treated differently from what I am accustomed to treat it, and the patients died. I therefore think that I have a right to offer my opinion about the nature and treatment of this fever.'

"Richter, at the time he wrote this, was sixty years of age. The inexperience of youth therefore will not explain it; and it is explicable only on the supposition, either that old as he was he had never seen the epidemic puerperal fever, or that if he had, the epidemics which he had seen were singularly mild."

I shall add from the same authority the opinion of four eminent men in London, who

had tried a plan of treatment employed by M. Doulcet, of the Hotel Dieu, and who made a report upon the same to the Royal Medical Society of Paris in 1782. After having been foiled in every thing else, he at length tried emetics. "From losing every patient, he now lost none. During four months nearly two hundred were cured: five or six refused to take the medicine, and all these died.

"When this account arrived in England, it produced, as may be easily supposed, a strong sensation; and the practice was tried by various physicians with different results.

"Dr. Walsh said it was infallible.

"Dr. Denman, that it was eminently useful.

"Dr. Lowder, that it disappointed him.

"Dr. John Clarke, that it was injurious.*"

In comparing these accounts of a well known disease with those we receive of the Cholera Morbus, we shall certainly confess there is a great analogy in the anomalies which they both present.

I extract the following from the Madras Report:—

"One thing however, I fear, is certain, viz.,

* "An Account of some of the most important Diseases peculiar to Women. London. Murray. 1829."

that we are as yet as little acquainted with its origin, as its mode of cure; for example, I read from Bombay, that a number of cases of the Epidemic Cholera have lately appeared in the island, but that its mode of treatment is now so well understood, that its re-appearance causes no alarm: at the same time, I hear from the camp of a corps now on its march, 'We lost about ten people a day: no one returns alive from the hospital tent; and our Doctor says, there is no cure for it. One medical man boldly estimates his cures by thousands, while his no less zealous neighbour is heard to say, though he has followed the same plan of treatment, he has failed throughout.'"

Without referring, however, to the history of the disease, and its treatment in India, than which nothing can be more contradictory, let us compare the accounts of those who have practised in the late epidemic in Russia.

It was asserted, that the only salvation consisted in bleeding, resorted to in the first stage of the disease; and this upon such good authority, that the government, in its zeal for the public good, gave orders to the different medical men all over the empire to employ the lancet immediately upon being sent for.

It was soon discovered that this was not an universal remedy; and though the lancet was employed, the blood frequently would not flow, and the order was very judiciously countermanded.

It was then discovered, that if perspiration could be once excited, the danger was over; and various ingenious modes were contrived for its accomplishment.

Dr. Loder, of Moscow, observes, " La chose la plus essentielle et la plus pressante, est de debarrasser le corps la plus promptement possible du Miasme, et ceci s' opere par la transpiration."

Dr. Jenicken, in his reply to Dr. Loder, says on the contrary, " La transpiration me paroit superflue; si elle est profuse, elle peut devenir nuisible."

Of internal remedies calomel and opium were the most in repute. I saw Dr. Menkoffski last autumn as he was on the point of departing for Saratoff, and I asked him what plan of treatment he proposed to adopt: he replied, bleeding at first, and then calomel and opium. I saw him a year after upon his return, and he told me he had no success with this plan, but when he changed it for warm baths and small doses

of magnesia and rhubarb, he was very successful.

Without going into further detail previous to the arrival of the disease in St. Petersburg, we came to that period which seemed to found a new era in the history and treatment of Cholera, and refer to Dr. Leo's practice and the subnitrate of bismuth.

This was believed to be a specific, and no medicine was ever more generally distributed than was this invaluable remedy. What was the reply to the inquiries made respecting its use in this capital?

One practitioner observed he considered it all but a specific.

A second, that it acted as a poison whenever he had seen it employed.

A third, that if the patient did not die of Cholera, he died of congestion of the brain, where bismuth had been administered.

With regard to bleeding, the same difference of opinion prevailed. When I was performing duty at the Sakoloff Hospital, no case recovered in which bleeding had been resorted to.

My successors informed me that afterwards all the cases that were bled early in the disease recovered.

One physician asserted that he had not lost a patient; he took away a tea-cup full of blood and gave an infusion of lime-flower to drink.

With respect to the use of opium, many asserted that typhus fever was a necessary consequence of its employment, and yet of twenty-three cases in public practice that I so treated, only one died of typhus—seven died within forty-eight hours of the attack, the rest recovered.

However difficult a task it may appear to reconcile such discordant and contradictory reports, we shall again refer to the history of puerperal fever, which comes very àpropos to save our credit.

"Another remarkable circumstance about this disease is, that when it is most prevalent it is most dangerous. Each case is much more difficult to cure than when it occurs seldomer. The practitioner finds that although the group of symptoms resembles what he was formerly accustomed to, he has now to deal with a disease far more obstinate and destructive, and his usual remedies are not so successful as formerly; he loses case after case in spite of his best efforts. When it has thus been raging for a considerable time, it at length subsides; the

cases become less frequent and less severe; the practitioner finds his treatment becoming more successful, partly because experience has taught him to detect it earlier and to treat it better, but probably also because the disease has itself become milder."

In the first place then we should apply to those who have never lost a case, the words of Dr. Gooch to Richter, viz., that though they may be sixty years old, they have never seen a case of Epidemic Cholera.

Those who have been so uniformly successful have either only met with cases of common Cholera, or treated the other when upon the decline. For this circumstance alone stamps the identity of the present epidemic with the Eastern disease, viz., that upon the onset, whatever may be the practice, it is almost universally fatal; and I appeal to the candour of my colleagues if, during the first ten days of its invasion, it did not sustain this frightful character.

This, too, is the grand secret, this the real solution of the problem, this unravels all the intricacies, and forms a bond of union between elements which appear so discordant.

The Epidemic Cholera upon its first invasion baffles all attempts to conquer it; but it gra-

dually loses its intensity, and towards its decline becomes as tractable as other disorders of the alimentary canal.

If we are asked why it should so operate upon its first invasion, we can only confess our ignorance and reply, that medicine is an art and not a science, that the one is founded on principles which are known and immutable, the other upon one that is unknown and is ever varying, viz., the vital principle.

It is this which governs, by its own peculiar laws, the animal economy; that regulates all predispositions, susceptibilities and impressions, and which distinguishes the animal from the machine he fabricates.

Having endeavoured to prove that the apparent discords may be reconciled to a great extent by considering the epidemic in its different stages, I have subjoined some observations upon the different remedies that have been employed, and upon the methods of treatment which I have found most successful.

EXTERNAL MEANS.

The use of baths was at the commencement of the epidemic almost universal; but they soon fell into disuse, and upon the whole may be considered as having been prejudicial.

They were often succeeded by great exhaustion, and many were taken dead out of the water. The difficulty of transporting a patient from his bed to a bath was often considerable, and very inconvenient to him; and as the object could be equally attained by frictions with hot cloths, or bags of hot sand applied over the whole surface, much distress and fatigue were spared the patient by substituting these means for baths. Unless they are employed at the commencement, when the excitement is still considerable, they will invariably do harm; but if easily administered and sufficient attendants are at hand, they will often be serviceable in this stage and prove very comfortable.

The horizontal position has been particularly

recommended during the whole course of this disease, and this must be disturbed by immersion in the common bath.

Vapour baths are much less prejudicial in this respect, because this position may be maintained upon the simple and judicious plan upon which they are constructed. If the surface be cold without the vital powers being too much exhausted, the use of the hot-water bath is indicated; but as all the effects can be produced with much less inconvenience and less risk by the vapour bath, it should always be preferred. If, however, the hot-water bath is used (and some patients will insist upon it,) the temperature should be regulated by the state of the body at the time it is immersed.

If a patient in the state of collapse, when the temperature is at twenty-four degrees, be plunged suddenly into a bath at thirty degrees Reaumur, much pain and uneasiness will be caused by the sudden transition from cold to heat. Neither should he remain longer in the bath than is necessary to restore the heat and perspiration, if this be the object.

Baths are upon the whole a doubtful remedy, and more effectual and less prejudicial means may be substituted for them.

BLEEDING.

Few remedies require more decision in their employment than general blood-letting, and upon no subject is there a greater diversity of opinion. An indiscriminate use of any remedy must naturally bring it into disrepute, but in the present epidemic bleeding has been most decidedly beneficial, if employed judiciously.

Those who consider the disease a species of asphyxia, employ it under all circumstances and in all stages, and relate marvellous cures performed upon those who were apparently dead. The case of the young man who had only nephritic symptoms, but with total loss of pulse, illustrates its utility in restoring the circulation (see Case 6). Bleeding from the arm in the first stage, when the pulse is full and the temperature not reduced, is often sufficient to cut short the disease. The quantity of blood to be drawn should be but small; eight ounces will be sufficient to allow the remainder to circulate more freely and relieve the heart, and this will not too much exhaust the patient.

The blood is generally thicker than usual,

highly carbonized, and forms a loose coagulum. I do not know if the blood of Cholera patients has been analysed during the present epidemic. The patient usually feels immediate relief, particularly where the head has been much affected. He should be bled in the horizontal posture, and remain quiet for some time afterwards. The operation of medicines is generally much facilitated by a small bleeding.

The absence of the pulse is no prohibition to the use of the lancet, unless this is accompanied by other symptoms of great debility, and the system has been exhausted by previous evacuations, and the surface is covered with a cold clammy sweat; in such instances I have never seen blood-letting serviceable, though many assert the contrary. In some cases the pulse ceases to beat very early, but upon opening a vein the blood flows slowly at first, gradually the current becomes fuller and stronger, the pulse beats very sensibly, and the heart thus relieved is enabled to continue the circulation.

A few minutes later, the blood perhaps would have been so inspissated as to have precluded all utility of opening a vein, and asphyxia would have followed from the impediments afforded to

the arteries of the heart and lungs; hence it is that this disease requires such constant attendance, and such prompt decision upon the part of the practitioner.

There are some cases, perhaps, in which even in the first stage bleeding would be inadmissible, as with the old and debilitated, and such as have indulged in the use of spirituous liquors.

Upon the whole, however, there is no one remedy that can be quoted as having been more universally beneficial; and with regard to its use we may say again with Celsus, "Si vires sinunt sanguinem mittere optimum est."

Leeches may be used to relieve local congestions, but are more useful in the after treatment. They are too slow in their operation for such a malady. Cupping offers much greater chance of success; but it is hardly used in this city, and there are no expert cuppers.

BLISTERS AND SINAPISMS

Are amongst the most efficacious means that we can employ for the cure of Cholera.

It may be said of them, that they are indis-

pensible, and there is hardly any stage of the disease in which they may not be employed with advantage.

It is upon the principle of counter-irritation that they are used, and as long as the disease endures so long will their use be indicated, and they should be repeated continually.

The pain in the bowels and even the sickness are often instantaneously relieved by the application of a large sinapism over the abdomen, and much pain is saved the patient, if it be applied early.

Blisters are more useful in the second stage, when chronic inflammation succeeds; their action is too slow in the first, and they are less useful than sinapisms at this period.

They do not seem to produce such decided benefit when applied to the calves of the legs, and arms; they may doubtless be useful, but if applied solely for the purpose of restoring the heat and circulation to the parts, it must be remembered that they will interfere with subsequent frictions which are more effectual.

Of the stronger remedies made use of for the same purpose, as the actual and potential cautery and the mineral acids, I have not witnessed any application.

When the skin has been excoriated by the use of sinapisms, anodyne fomentations, or even pulverized opium, sprinkled over the tender surface, will often be useful in relieving pain and nausea.

FRICTIONS

Have been employed in almost all the cases of Cholera, and particularly at the commencement, when they were reported to have been more effectual than they afterwards proved to be.

The object of friction is two-fold.

1st. To restore the circulation in the part, and the heat that is dependent upon it.

2d. To introduce remedies into the system by absorption.

The first may be effected by mere dry rubbing with the hand, or warm flannel, or the flesh-brush, and, if persisted in, will often restore the circulation to the extremities which were previously cold and senseless; but it requires great perseverance and long continuance, for it is necessary to keep up the circulation after it is restored; hence it can only be

recommended in those circumstances where there are plenty of attendants to wait upon the sick.

Varieties of liniments have been proposed to aid the effects of friction, but they may be superseded by steady rubbing with the hand, which should be sprinkled occasionally with a little starch-powder or a little camphorated oil to prevent abrasion.

Where proper and effectual rubbing cannot be depended upon, stimulating liniments should be employed; because little rubbing will suffice, and the effect will remain after it is discontinued.

The liniment composed of camphorated spirit and sal volatile will produce a rubefacient effect and answer every purpose.

Secondly. Medicines are introduced into the circulation by frictions, and consequently different medicines are employed according as there are different indications to fulfil.

Local pain and spasm are alleviated by frictions of opium, hyoscyamus, and other narcotics in the form of liniment or unguent.

The cessation of the urinary secretion, which occurs only where there has been much diarrhœa and vomiting (as the watery parts of the

blood are so disposed of that the kidnies have little to do), has led to the employment of spirit of turpentine as a liniment. I have never seen the secretion restored by its use, as I have seldom seen it suspended where the other evacuations were moderate.

Much stress has been laid upon this symptom even in the diagnosis of the disease, but upon consideration it appears to be fully accounted for, and is not confined to Cholera.

In summer much less urine is secreted than in winter, because there is much more perspiration, and cold suddenly applied to the surface will determine immediately to the kidnies, as we often experience.

Baron Haller mentions the case of a man who never washed his hands without a desire to make water, and a man will go through a whole summer's day, if in perspiration, without any urine being secreted.

This is the principle upon which it is suspended in Cholera; a principle of the animal economy, that one set of organs will supply the functions of another under peculiar circumstances.

Medicated liniments may consequently be employed with great advantage, when directed

to particular objects, and they are highly useful in relieving the stomach from the continual action of medicines.

ENEMAS

Are useful in those cases, in which the vomiting prevents the action of medicines taken into the stomach. They have little effect in checking the diarrhœa, at least in the onset; for from the great irritability of the intestines, they are seldom retained long enough to do good.

They are of signal service in the latter stages, and particularly in such cases as have been attended with great spasm, where the bowels remain sore for a long time after, and every motion is productive of pain.

In such instances, an enema composed of half a pint of linseed tea and ten drops of laudanum produces immediate relief, and the same quantity may be frequently repeated, and will be less injurious to the system in general than where opium is given by the mouth.

In those cases, however, in which it is the object to check the diarrhœa immediately,

and every thing is rejected from the stomach, enemas should be resorted to; but the dose of laudanum must be larger than under other circumstances. Fifty drops in half a pint of starch may be injected, and even repeated without danger.

Emollient enemas have not been much employed, unless with opium, for the plan of dilution proposed by Sydenham has not been of much benefit in this epidemic.

INTERNAL REMEDIES.

Antispasmodics are indicated at the very commencement of the disease, and will often cut it short at once.

The most powerful of this class of medicines are opium and æther. Musk and camphor seem to have had no particular action on the disease, though they are useful in combination with opium.

With respect to the employment of antispasmodics it should be remembered, that they are not specifics, nor are administered but with the

view to allay uneasy symptoms, and should be suspended when this indication has been fulfilled.

A long continued use of such remedies would be productive of cerebral congestion and consequent fever, as I have seen delirium tremens subsequent upon too long continuance of narcotics. Where these remedies have been much employed, purgatives become more necessary.

ASTRINGENTS

Are never indicated in cases of true Cholera; but as ordinary bowel complaints will, if neglected, degenerate into this disease, so they should be checked at once. The common chalk mixture, with a little tincture of catechu or laudanum, will answer every purpose. A decoction of rhatany root is also very useful in this affection.

DIURETICS.

As the suspension of the urinary secretion depends upon no want of energy in the organs of the kidnies, but arises from the aqueous parts

of the blood being secreted into the stomach and intestines, so diuretics can be of no service till the primary action is subdued; for as soon as the balance of circulation is restored, the urine will be secreted in relative proportion to the rest of the secretions.

PURGATIVES

Are among the most indispensable remedies in the cure of the Cholera, and upon a proper decision in their administration, will the duration of the disease often depend. They are most essential also in the after-treatment, and if sufficiently employed will very much curtail the period of convalescence.

The most common purgatives in use have been calomel, salts, and castor oil; but the latter has been employed with the greatest success, and is an invaluable remedy.

A full dose of calomel is often useful in the beginning of the convalescence, as it acts upon all the secretions; but the simple purging, which is so requisite after this disorder, is best effected by small and repeated doses of castor oil.

The stomach unfortunately is often inclined to reject the dose, which may sometimes be prevented by adding a tea-spoonful of brandy, or taking it upon peppermint-water.

As regards the use of purgatives, the same observation is applicable as with regard to anti-spasmodics; they are no specifics, but are given to combat and relieve certain symptoms.

They are indicated as long as the bowels do not perform their functions regularly, and the motions have an unusual appearance; nor is there any fear of re-producing the disease by their continuance, so long as we take these marks for our guide. It is much more likely to recur from neglecting to administer them; and the quantity of unhealthy matter which is often evacuated for a long time after the disease has been subdued, warrants the assertion.

Dr. Hamilton in his valuable Essay on Purgatives, has justly observed that their effects are not merely confined to expelling fæces from the intestinal canal, but that they act upon the secretions and change their morbid nature.

Hence it is that he was so successful in curing many diseases by these means, because he persevered in their use till this change was produced.

Sydenham, in treating of the cure of the Cholera, observes, that to administer purgatives in this disease is to extinguish fire by pouring oil upon the flames, "ignem oleo extinguere," but he speaks of the disease at its onset only.

There is evidently a diseased action in the whole of the inner surface of the mucous membrane, so much so that some have considered the Cholera as a catarrh of the intestinal canal.

This action is most vehement at the commencement, and if not subdued, is speedily fatal; but even in those cases where we have been fortunate enough to cut short the disease by the measures to be detailed, we cannot suppose that parts which have been so disordered should return immediately to their healthy state, and more particularly, when we consider that the extensive surface of the mucous membrane of the intestines has been thrown into morbid action.

It is with the body as with the mind, habit becomes second nature, and if a morbid action be allowed to prevail for any length of time, the difficulty of overcoming it will increase with its duration; hence if the morbid secretions of Cholera are not thoroughly expelled, a

cause will always exist for a recurrence of the malady. To obviate this, therefore, purgatives should be administered not only to expel what has been already secreted, but to empty the vessels of what they still retain, and excite in them a new and healthy action, of which we can judge only by the appearance of the fæces; and when they are natural both in colour and consistence, then only should be discontinued the use of purgatives.

If they are neglected in the treatment of Cholera, fevers and chronic inflammation will be necessary consequences.

Salts and senna have been proscribed in this disease, and consistently with the contradiction that reigns upon the subject, some practitioners have spoken of curing all their patients by the use of Glauber salts; whilst a physician well conversant with the disease in India, has assured me that he has seen Cholera produced by the common black dose, which is a composition of salts and senna.

The same observations will apply to other purgatives in this, as in other diseases.

EMETICS.

The employment of emetics has not been very general, nor has it been attended with much success, except in those cases where popular remedies have been taken and have produced vomiting.

From an absurd idea, that poison had been distributed and mixed with the food and drink of the people, it was a common practice with them to drink large quantities of milk and oil when they felt indisposed, because they considered them as antidotes to poison. The natural consequence of such potations was copious vomiting, and several authentic instances of cures so produced are upon record.

The same means when regularly prescribed by physicians were not found to have so good an effect, but some reasons may be assigned for the failure.

In the first place, faith and confidence are no small adjuncts to the efficacy of remedies, and these are implied by the self-administration of them.

In the second place, a man finding himself

ill, believing himself to be poisoned and having the means of salvation at hand, applies to them immediately. If his illness depended upon indigestion the effect of the remedy would be certain, and more particularly, as no time would be lost in its administration.

If on the contrary he were to wait for medical advice before he used these means, two things would be evident, viz., that the time in which they might have proved serviceable would have elapsed, and that he had no particular faith in the remedy. Now we know that faith removes mountains.

I was called in the night to see an under officer of police who supposed himself attacked with Cholera. Upon entering his chamber I found him groaning in bed, and his wife was administering oil and milk to him. A table-spoonful of each were poured down his throat, and as soon as they were rejected from his stomach they were immediately repeated, and the whole cure consisted of this plan of treatment.—He recovered.

Salt has been equally recommended for the cure of Cholera, but it has, as far as we can judge correctly, no title to consideration beyond its emetic property.

"Mr. Wilson states, that the routine practice in Malwah was to drench the patients with large draughts of salt and water. This must be attended with the double effect of emetic and purge, and administered at the outset would meet the indication of the first stage of the disease."—*Kennedy's Notes.*

OF CALOMEL AND OPIUM.

It may be fairly asked, what led to the universal employment of these at the commencement, and what to their subsequent disuse?

The second query is answered by the first, it was the universal employment of them which caused their disgrace.

It must be the same with every remedy that is employed indiscriminately, no matter what testimony it may have in its favour—it may have cured hundreds and thousands—still it will finally be abandoned and proved to be worthless, unless it has been employed upon some known principle, and given to fulfil some indication. What effects are to be expected from a combination of calomel and opium? no other than the gradual introduction of mercury into

the system, for the opium will prevent any purgative effect of the calomel.

Is the introduction of mercury into the system sufficiently rapid to produce any good effect in this disease, particularly at its commencement? This question certainly must be answered in the negative.

The calomel being so combined, and not acting as a purgative, can be of no use therefore in the first stages, and the good to be expected must be derived from the opium.

The quantity of this will often not be sufficient to produce the desired effect, and hence the combination will fail in both instances. It is only when calomel is given in very large doses, so as to act upon the mucous membrane of the intestines, that it can be beneficial at the onset.

But though this combination may fail where administered empirically, it may be of signal service in many cases where we wish to produce a general mercurial action; and especially in the sequel of Cholera.

In slight cases also, where the quantity of opium is sufficient to allay the spasmodic action, whilst time is allowed the calomel to act gradually, this combination may be of service; but it must share the same fate as all the vaunted

nostrums which, when administered indiscriminately, lose even the merit to which they are really entitled.

Where mercurial action is indicated, as in the chronic inflammation which sometimes follows, calomel may be given combined either with opium or hyoscyamus; the latter seems to be preferable.

Of calomel given in large doses, as a scruple or half drachm, I have had no experience; nor can I find that it was so administered during the present epidemic.

The difference of climate must be taken into consideration when such remedies are to be employed, and in such doses.

In investigating the truth of the specific action of calomel and opium, we shall probably find them to have succeeded when employed scientifically, and to have failed when used empirically; and in searching for the truth of twenty other specific remedies we shall perhaps meet with the same conviction. It is necessary also to inquire at what period of the disease so much success has been obtained by any particular remedy; for it is from this omission in our investigations that we have been led away with the reports handed over to us, of certain

remedies having been successful in so many cases.

These same remedies have proved equally successful in our hands when employed under the same circumstances, and at a period of the epidemic when nature herself will be all but sufficient to work out her cure. It is in the commencement of the disease that every thing fails, and that no class of medicines seems to have the least control over it; for in this particular also, as in many others before mentioned, the analogy holds good between the Cholera of the two zones.

THE SUBNITRATE OF BISMUTH.

In corroboration of this assertion no better proof can be alleged than the boasted efficacy of bismuth. No medicine was so generally administered, and none was reputed to have had more success by the faculty in general. Its indiscriminate employment in all cases, from the slightest attacks to the moribund condition of the patient, brought it into disrepute. Its continued use also, after the symptoms which indicated its employment had subsided, caused cerebral congestions, and the patients died of the treatment as freely as of the disease.

It had been recommended by Dr. Leo to continue it during the whole course of the disease, and to administer no other remedy; but the Doctor had prescribed it thus successfully when the disease was already upon the decline, and as it is in many cases extremely useful, so at this period it would be peculiarly beneficial; and as the symptoms would rapidly decline under its use, the danger of administering it too long was naturally avoided.

It was said to have completely succeeded in Warsaw, so that it was vaunted as a specific; but when it was resorted to in the commencement of the same epidemic, which had travelled to Dantzic, it shared the fate of many of its predecessors, and was declared to be null and void in its effects.

Upon the whole, however, much good is to be derived from the prudent employment of this remedy. When used as an antispasmodic and not continued beyond the time indicated for its use, it has produced most beneficial results. No remedy seems to quiet the cramps and vomiting more effectually than bismuth, nor, when employed in moderation, does it produce those unpleasant effects upon the system which follow the use of severer remedies. If administered, the plan proposed by Dr. Leo is

the best, with the precaution of discontinuing it as soon as the vomiting and spasms have ceased.

If this effect be not produced after six or eight doses, it is useless to continue it unless there are symptoms of amelioration.

In the treatment of the present epidemic I have followed a plan suggested by the experience of others, and I have never abandoned it during the whole prevalence of the disease.

I have no other grounds to offer for my adherence to this plan than a success, upon the whole, greater than many others that were adopted.

Previous to the invasion of the disease, I had collected from authors and practitioners in general who had some experience in it, all the evidence I could obtain; and upon comparing opinions, and calculating the chances of cure from the different means employed, I selected those which, according to these testimonies, had succeeded the best. Popular remedies deserve also more attention in this than in most other diseases, for till some more certain light is thrown upon the nature and seat of the disease, all our practice must be empirical; and of nostrums, let us take those which have the greatest evidence in their favour.

The testimony of a ship captain is as valid as that of a physician, when the question is merely one of practical result.

The use of opium, therefore, appeared to me more worthy of trial than all other remedies hitherto employed, because it has the greatest mass of testimony in its favour, both popular and professional.

It has been a general rule, with physicians in the East, to recommend their patients to apply to the laudanum bottle in all cases where medical aid could not be immediately procured, and this is saying a good deal for the remedy.

In one report with the perusal of which I was favoured, I read, that small phials were placed upon the table after dinner with the wine decanters; and moreover, that they were placed upon posts by the road side, that, should the traveller be seized suddenly, he might resort to this remedy. Such was the opinion entertained of the efficacy of laudanum.

It is needless to enlarge upon all the corroborative evidence, such as may be procured from captains of vessels, who have saved many of their crew by their being acquainted with this medicine, or to quote the testimony of many individuals who have been benefited by its use.

Among physicians, however different their

theories may be as to the nature of the complaints, it seems that all employ this drug in some shape or other, and at some period of the complaint; so that upon the whole it may be said to approach nearer to a specific than any thing with which we are acquainted.

That it relieves spasm more certainly than any other remedy, we have positive evidence; and if Cholera does not immediately depend upon spasm, it is always more or less accompanied by it, so that in the employment of this remedy we are fulfilling a direct indication; and from the practice I have had in this complaint, though it may have been more limited than that of many of my colleagues, I am warranted in saying it has almost answered my expectations.

The following is the practice I have almost universally adopted in cases of Cholera where I have been called in at the commencement. If the patient is robust, the pulse still perceptible, and the system not too much reduced by evacuations, I order from six to eight ounces of blood to be drawn from the arm, the patient being first put to bed, in the recumbent posture.

The following draught is then to be given:

Laudanum and æther, of each twenty-five

drops. Strong peppermint water, an ounce and half.

If this be rejected, it should be repeated immediately; if the second be likewise not retained, then a clyster of linseed tea with fifty drops of laudanum should be administered.

It often happens that the patient after taking the first dose falls asleep, and wakes in perfect health.

A large sinapism to the abdomen, and bottles of hot water to the feet, should not be omitted; if these means produce speedy relief, an ounce of castor oil should be prescribed as soon as the stomach and bowels are quiet.

Such is the most successful practice in slight cases, and I believe many a severer attack has been prevented by this method of proceeding; for I had given full directions to many of my patients how to act in case of not immediately finding medical aid, and all the houses I attended were prepared with these draughts.

It may have happened that some have been taken unnecessarily, but I am convinced that many a case has been cut short by immediately applying to this remedy.

It would be well if this always succeeded, but often, after a short respite, the symptoms return, the vomiting continues, accompanied

with spasms of the abdominal muscles and calves of the legs.

In such cases, three grains of bismuth should be given every two hours, and continued till the vomiting has ceased, and the spasmodic action greatly or wholly subsided. The bismuth should then be discontinued, for the symptoms which seemed to demand it have subsided; and in this sense only I consider it useful, and by no means a specific for the disease. If it be continued for any length of time, it is in many cases followed by congestion of the brain.

If this mode of employing succeeds, as soon as the necessity for continuing it ceases, then the castor oil should be resorted to as in the first-mentioned instance, for this is a *sine quâ non*. When the shock is thus broken, and the patient begins to recover, nothing farther need be done than to keep the bowels open and return to food gradually; beginning by mucilaginous diet, and by degrees adding veal and chicken broth to the meal.

If slight delirium should occur, a few leeches to the temples, and a blister to the back of the neck will generally relieve it.

If the means detailed above did not succeed, I have not myself been able to succeed by any other. I do not mean to assert that these are

the only means I have employed, nor that nothing more is necessary; but they are those upon which I rely the most, and if employed early in the attack will often be attended with success.

Many other symptoms require attention even under this plan of proceeding.

The cramps may often be relieved by friction with the hands, or with some narcotic and stimulating embrocations.

The colicky pains which remain afterwards, and are renewed by every attempt to go to stool, are best relieved by clysters of starch and opium.

Cataplasms of hemlock or henbane applied over the whole surface of the abdomen, and renewed every four hours, are of much service in relieving these after-pains.

The nausea and vomiting are more relieved by the saline effervescing draught than any other remedy. Cold drinks do not seem to be more prejudicial than warm, and when much desired by the patient should be given freely. Lemonade iced has often been taken with advantage, and even the lower orders have drank their quass as usual, and with seeming benefit.

The nitric acid may be given here also with

great benefit as a common drink. Fifty drops of the diluted acid added to a pint of water, sweetened to the taste, is a grateful beverage.

If the stomach remain very tender to the touch, and there is appearance of subsequent inflammation, leeches should be applied, and when they have bled freely, a large cataplasm of narcotic herbs and linseed-meal applied over their bites. In this stage calomel is particularly indicated, and it should be given so as to affect the system; but the patient must be narrowly watched during its use, and when the gums begin to be affected, it should be suspended. Some fatal cases have occurred, where its continuance has been followed by swelling of the parotid gland.

It is better to give it in combination with hyoscyamus than with opium. Three grains of calomel and one of hyoscyamus may be given every three hours, till the effect is produced.

As soon as the mouth becomes affected the inflammation subsides. It is what we see in iritis, where we can witness its effects.

It is here a specific.

It is by no means incompatible with this practice to give anodyne injections to relieve the spasms of the bowels.

As soon as the desired effects are produced

by the employment of the mercury, we must return again to the castor oil, and continue it till the cure is complete.

As long as the motions are of a dark colour and pitchy consistence, it is necessary to purge, for this is a source of irritation; and, though a consequence only of the disease, may still reproduce it. It is therefore necessary to inspect the motions daily, and by their return to their natural colour we may prognosticate the return to health.

When the pains cease after copious evacuations by castor oil, the cramps subside, and the motions are natural, the remaining debility will gradually disappear as the stomach digests the food which it receives, and which is the best tonic.

Costiveness will often remain for some time, and requires enemas.

It remains to speak of the treatment of the typhus fever and other nervous affections which are both a sequel and a part of the disease itself, but they require nothing peculiar, except that we should be cautious of giving stimulants and antispasmodics too soon; but I have extended these observations already much beyond my original intention.

Imperfect as they are, I offer them as having

occurred to me during my practice in the present epidemic. They have no pretensions to novelty or originality as far as regards the practice. It is perhaps the oldest extant, but it appears to me the most successful hitherto adopted.

I have introduced the subject of puerperal fever, because I think there are some striking coincidences, and it helps to explain the contradictory opinions in the treatment of Cholera; contradictions which are not new in the history of medicine. The great desideratum is to ascertain the real seat of the disease, whether we are to look for it in the nervous system, or revive the humoral pathology.

If the cause be not evident, let us try to trace the effects and discover the parts of the system upon which it most operates; but this can only be hoped for in repeated and minute dissections.

I now conclude this imperfect sketch in the words of the late Dr. Gooch.

"If our object is to learn only what has been "*said* upon a subject, the pursuit of knowledge "is an easy task; but if it is to learn what is "*true* on a subject, the pursuit of knowledge is "the task of life."

CASES.

No. I.

CASE OF CHOLERA TERMINATING RAPIDLY, AND UNACCOMPANIED BY MANY OF THE MOST USUAL SYMPTOMS.

ADMIRAL ———, aged 56, was observed to go more frequently than usual to the water-closet after dinner on the 29th June. He had been quite well previously, ate his dinner as usual, which consisted of roast veal without vegetables. He took no notice of this looseness, and went to bed at his usual hour. He was moved several times during the night, but without pain or uneasiness. His lady being alarmed sent for me without his consent at six o'clock A.M. of the 30th; as I was absent, another medical man was sent for, who gave him some castor oil and laudanum.

I saw him myself about eleven A.M., and was immediately struck with the change in his countenance; for the Cholera physiognomy was decidedly formed, and that singular expression given to the features which can never be mistaken when once witnessed.

It has not improperly been described as a

countenance which does not belong to the individual himself.

The tongue was rather foul, but moist and still warm, surface cooler than natural; skin slightly corrugated, and of a bluish cast; respiration still free; pulse 68, small and depressed, no tendency to fever. Frequent loose watery motions resembling whey that has not been well strained, but with small pieces of curd floating in it; no pain whatever in passing motions; no colick nor pain about the umbilicus; urine passed freely with motions. No nausea or vomiting.

Upon enquiring whether there were any spasms in the legs or arms, he replied in the negative, but complained of a slight pain in one ancle which was hardly worth noticing. No vertigo or affection of the head, but a faint sensation caused only when he rose from his couch to go to stool, and this not till after several hours from the attack.

A singing noise in the ears complained of from the commencement.

I requested him immediately to go to bed, for he was in his clothes lying upon a sofa. He complied with great reluctance, for there was great moral depression and evident fear of the disease.

I ordered him to continue the medicines that had been prescribed for him, and recommended frictions and hot bottles of water to be applied to the feet, with sinapisms to the stomach.

I returned again at three P.M. The pulse was no longer to be found; the whole body was of a lead colour; the respiration laborious. Asphyxia was evidently produced.

The sensorium was quite free, but the moral depression great; he requested to see a priest, and died at five P.M.

There was no vomiting nor even nausea during the whole course of the disease, neither were there cramps or spasms, except towards the close, when the heart, being no longer able to propel the blood, the intercostal muscles were thrown into spasmodic action.

Fear had operated powerfully upon this patient; he had called upon me repeatedly the preceding week for instructions how to act in case of being attacked. He had made several changes in his diet, and as I learned from his friends his mind had been much occupied for some time with the Cholera; as soon as he believed himself attacked he gave himself up for lost.

No. II.

CASE OF CHOLERA TERMINATING FATALLY IN EIGHT HOURS, AND IN WHICH THE SYMPTOMS WERE NOT OF A SEVERE CHARACTER.

An old man of sixty, in the service of General ————, applied to me at eight o'clock A.M.; he had been seized two hours previously with slight giddiness and other symptoms of Cholera, had vomited three times, had several loose stools, and complained of cramps in the legs and arms.

The pulse was good, and the animal heat apparently not diminished.

I prescribed the draught and other remedies before mentioned.

Two hours afterwards I saw him again, the pulse was more feeble but distinct, a cold clammy sweat covered the whole body. There was very little anxiety, but the Cholera countenance was formed. He scarcely complained of pain, never uttered a groan, and died at two P.M., retaining his faculties to the last.

No. III.

CASE OF ACUTE CHOLERA WITH TENDENCY TO INFLAMMATION OF BOWELS, TERMINATING FAVOURABLY.

A young woman of twenty-five was seized about ten P.M. with excruciating pains in the abdomen, recurring at very short intervals and

with increased agony. She had been formerly subject to colick; but was aware from the first that this was an attack of Cholera, judging from the difference of feeling and intensity of pains.

She ascribed the attack to having eaten some cold beans for supper; but though convinced of the nature of her complaint was quite devoid of fear.

I saw her an hour after she was seized, she had been four times to stool, the three first motions were solid, the last watery and like whey. She complained of great cold and shivering. There was a peculiar change in the countenance, and some difficulty of articulation. The feet were quite cold, and a clammy sweat was sensible upon the lower extremities, whilst the upper were bedewed with warm perspiration. The breathing was hurried and she was very restless, the pulse very low and weak. She complained of a rushing noise in her ears which almost caused deafness. Urine was passed with each motion. Two table spoonsful of castor oil and fifty drops of laudanum were given immediately; this was retained about half an hour, and then rejected. Thirty more drops of laudanum were given in a glass of hot brandy and water, a large sinapism was applied

over the abdomen and bottle of hot water to the feet. She soon felt relieved after the second dose, but the spasms still continued. A saline effervescing mixture was given every hour, and every second hour three gains of the subnitrate of bismuth.

The following morning I learnt that the pains had gradually subsided, and that she had slept a little. The cramps were much diminished, the countenance less anxious, voice more natural; noise in ears still continues; tongue moist, perspiration general, pulse fuller; had made water freely; still a sense of acute pain all over abdomen, much increased by pressure, or by turning in bed or by weight of bed clothes. She had taken four of the bismuth powders, which I ordered to be discontinued.

Twelve leeches applied to the abdomen.

She felt immediate relief from the leeches, and was more comfortable in the evening; bowels confined, all the other painful symptoms diminished.

Two table spoonsful of castor oil to be given early in the morning.

She passed a restless night, took the oil early; it had operated twice freely; the motions dark and fœtid, resembling pitch, and passed with considerable pain and tenesmus; complains

of head being light and spasms in the chest, some fever.

The third day of the complaint the pain in the abdomen continued, increased by motion and pressure, and even by the weight of the bed clothes; no motion, general sensation of cold and shivering, head-ache and vertigo.

Two table spoonsful of castor oil to be given in the morning.

She passed another restless night, and all the symptoms much aggravated; the oil has not operated.

Eighteen leeches ordered to the abdomen, and a solution of Epsom salts in almond milk every two hours.

The leeches again produced immediate relief; the bowels being still confined, a purging clyster was ordered, and a pill composed of three grains of calomel and one of the extract of hyoscyamus to be taken every three hours.

She passed a quiet night without much pain; no motion, thirst and nausea, tongue moist, less head-ache. Pulse nearly natural, rather depressed; abdomen still painful on pressure.

Two table spoonsful of castor oil to be taken immediately.

Severe pain after taking oil, which operated several times; each motion produced great

uneasiness, which she described as running all along the bowels, and succeeded by spasms. Sense of bearing down in bladder. Warm anodyne fomentations and cataplasms of hyoscyamus and conium to be applied frequently. Five grains of extract of hyoscyamus to be given at bed time.

She slept well all night; several dark-coloured motions passed with less pain, pulse and heat natural, feels much better; but towards the evening of this, the sixth day, was seized with general rigor and violent pains in all the limbs, succeeded by heat and determination of blood to the head.

Throat and tongue very sore, gums inflamed, maxillary glands much swollen, considerable ptyalism; ordered a lotion for the mouth and a dose of castor oil.

Slept ill from general irritation; seven motions dark and fœtid, and passed with much pain; towards evening head and affection of mouth relieved by the purging; some tenesmus, had an anodyne injection, calomel discontinued. Had taken sixteen grains in all. Hyoscyamus continued at bed time. From this time the complaint gradually diminished, the pain of the abdomen subsided, and though she was subject to griping colicky pains, there was no tendency

to inflammation. She continued the anodyne injections and cataplasms; the bowels remained torpid for a long time after, and required castor oil. The appetite and strength returned with the use of tonics.

No. IV.

CASES OF INCIPIENT CHOLERA CURED IN THE FIRST STAGE.

A shop-keeper of sober habits called upon me about eight o'clock, A. M., and informed me he had been seized, about an hour after he rose, with giddiness accompanied by a desire to vomit, and he felt unable to pursue his occupation.

His pulse was full and quick, skin rather warmer than usual, slight twitching pains in the calves of the legs; had three stools of a watery nature and accompanied by pain in the bowels.

Ordered him to lose eight ounces of blood, to go to bed, and take the draught with laudanum and æther.

The following day he was in his shop as usual, and had no return of the complaint.

No. V.

A footman, of rather disorderly habits, came home late at night, and was suddenly attacked

with giddiness, nausea, vomiting, cramps and other symptoms of Cholera. A draught ready prepared was given him immediately; he went to bed and slept soundly all night, and awoke well in the morning.

Some days after he was attacked in a similar manner, and had again recourse to the draught, which relieved the immediate symptoms; he remained unwell for a day or two, and then resumed his occupation.

No. VI.

CASE IN WHICH THE MOST PROMINENT SYMPTOMS OF CHOLERA DID NOT OCCUR TILL THE SECOND DAY OF THE DISEASE.

A young man of thirty-three was admitted into the Sokoloff Hospital about two P.M. He reported himself to have been in perfect health previous to his present attack.

He had been seized about nine A.M. with shivering and vertigo, succeeded by most excruciating pains in the loins. He had no vomiting or diarrhœa, and made water freely.

The extremities were quite cold, there was no pulse at the wrist, the lips were black, and the countenance ghastly. The restlessness of the body was extreme.

He was ordered a warm bath and some castor

oil, and the loins were rubbed with spirit of turpentine and laudanum. Two grains of calomel were given every hour. The following day he was bled from the arm, and leeches were applied to the loins. The pulse became distinct soon after, and vomiting and diarrhœa succeeded.—He died on the fifth day.

What a striking difference this case presents from the description given by *Cullen* of the Cholera Morbus; yet it was a well-marked case of this disease, not to be mistaken by persons conversant with the physiognomy of the present epidemic, and which is not observed in the worst cases of common Cholera; for it is not an emaciation produced by evacuations alone, but is present before the system has been so exhausted as to allow of this supposition. It is the outward and bodily sign of the disease itself.